

JTLS-GO

Version Description Document

February 2024



DEPARTMENT OF DEFENSE
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JOINT THEATER LEVEL SIMULATION - GLOBAL OPERATIONS
(JTLS-GO 6.2.4.0)

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ABSTRACT

The Joint Theater Level Simulation - Global Operations (JTLS-GO[®]) is an interactive, computer-based, multi-sided wargaming system that models air, land, naval, and Non-Governmental Organization (NGO) functions within a combined joint and coalition environment.

This *JTLS-GO Version Description Document (VDD)* describes the new features of the Version 6.2.4.0 delivery of the configuration-managed JTLS-GO software suite.

JTLS-GO 6.2.4.0 is a Maintenance release of the JTLS-GO 6.2 series that includes an updated repository of standard data, a demonstration scenario based in the western Pacific, as well as a few minor model functionality improvements implemented as Engineering Change Proposals (ECPs). These ECPs are summarized in Chapter 2. Code modifications that represent corrections to known Software Trouble Reports (STRs) are described in Chapter 3. Remaining and outstanding STRs are described in Chapter 4.

This publication is updated and revised as required for each Major or Maintenance version release of the JTLS-GO model. Corrections, additions, or recommendations for improvement must reference specific sections, pages, and paragraphs with appropriate justification and be forwarded to:

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1.0 INTRODUCTION

1.1 SCOPE

This *JTLS-GO Version Description Document (VDD)* describes Version 6.2.4.0 of the configuration managed Joint Theater Level Simulation - Global Operations (JTLS-GO[®]) software suite. JTLS-GO 6.2.4.0 is a Maintenance delivery for the JTLS-GO 6.2 series of releases.

JTLS-GO 6.2.4.0 includes the entire JTLS-GO suite of software, a repository of engineering level data, and a realistic demonstration scenario based on the Western Pacific theater of operations called “wespac62”. Detailed descriptions of some minor Engineering Change Proposals (ECPs) implemented for this release are provided in [Chapter 2.0](#), and [Chapter 3.0](#) describes the software errors that have been fixed since the last release of the JTLS-GO 6.2 series.

JTLS-GO 6.2.4.0 executes on the Red Hat Enterprise Linux Server Version 8.7 64-bit operating systems. The Web-Hosted Interface Program (WHIP[®]) user workstation interface can be executed on any operating system from any Java-compatible Web browser.

1.2 INVENTORY OF MATERIALS

This section lists documents and software that are relevant to JTLS-GO. All JTLS-GO documents included in this delivery are provided in PDF format within a documents subdirectory.

1.2.1 Obsolete/Outdated Documents

No documents have been deleted or become outdated as a result of this release.

1.2.2 Unchanged Documents

- *JTLS-GO Analyst Guide* (JTLS-GO Document 01, Version 6.2.0.0)
- *JTLS-GO Executive Overview* (JTLS-GO Document 02, Version 6.2.0.0)
- *JTLS-GO Configuration Management Plan* (JTLS-GO Document 03, Version 6.2.0.0)
- *JTLS-GO Controller Guide* (JTLS-GO Document 04, Version 6.2.3.0)
- *JTLS-GO Director Guide* (JTLS-GO Document 07, Version 6.2.0.0)
- *JTLS-GO Installation Manual* (JTLS-GO Document 09, Version 6.2.3.0)
- *JTLS-GO WHIP Training Manual* (JTLS-GO Document 10, Version 6.2.2.0)
- *JTLS-GO JOBE Quick Start Guide* (JTLS-GO Document 11, Version 6.2.2.0)
- *JTLS-GO Player Guide* (JTLS-GO Document 12, Version 6.2.3.0)

- *JTLS-GO Repository Description* (JTLS-GO Document 14, Version 6.2.0.0)
- *JTLS-GO Software Maintenance Manual* (JTLS-GO Document 15, Version 6.2.3.0)
- *JTLS-GO Entity Level Server User Guide* (JTLS-GO Document 19, Version 6.2.0.0)
- *JTLS-GO Federation User Guide* (JTLS-GO Document 20, Version 6.2.0.0)
- *JTLS-GO DoD Architecture Framework* (JTLS-GO Document 22, Version 6.2.0.0)
- *JTLS-GO DDS Training Manual* (JTLS-GO Document 23, Version 6.2.3.0)
- *JTLS-GO Air Services User Guide* (JTLS-GO Document 24, Version 6.2.0.0)

1.2.3 Updated Documents

- *JTLS-GO Data Requirements Manual* (JTLS-GO Document 05, Version 6.2.4.0)
- *JTLS-GO DDS User Guide* (JTLS-GO Document 06, Version 6.2.4.0)
- *JTLS-GO Technical Coordinator Guide* (JTLS-GO Document 16, Version 6.2.4.0)
- *JTLS-GO Version Description Document* (JTLS-GO Document 17, Version 6.2.4.0)
- *JTLS-GO C4I Interface Manual* (JTLS-GO Document 21, Version 6.2.4.0)

1.2.4 New Documents

No new documents are delivered with this version of the software.

1.2.5 Delivered Software Components

JTLS-GO 6.2.4.0 may be delivered either on a CD or as a set of compressed TAR files to be downloaded. Either method includes the complete suite of software executable code and command procedures. The following software components are included with this release:

- Combat Events Program (CEP)
- Scenario Initialization Program (SIP)
- Interface Configuration Program (ICP)
- Reformat Spreadsheet Program (RSP)
- JTLS Symbols Application (JSYMS)
- Database Development System (DDS)

- Database Configuration Program (DCP)
- DDS Client User Interface (DDSC)
- ATO Translator Service (ATOT)
- ATO Generator Service (ATOG)
- ATO Retrieval Program (ATORET)
- JTLS Convert Location Program (JCONVERT)
- Count Critical Order Program (CCO)
- JTLS HLA Interface Program (JHIP)
- After Action Review Client (AARC)
- Scenario Data Client (SDC)
- Order Entry Client (OEC)
- Order Verification Tool (OVT)
- JTLS Object Distribution Authority (JODA)

The current JODA build number is 188.

- Web Services Manager (WSM)
- Web-Hosted Interface Program (WHIP) and its component programs:
 - Apache Server (APACHE)
 - JTLS XML Serial Repository (JXSR)
 - Order Management Authority (OMA)
 - Synchronized Authentication and Preferences Service (SYNAPSE)
 - XML Message Service (XMS)
 - Total Recall Interactive Playback Program (TRIPP)
- Entity Level Server (ELS)
- JTLS Operational Interface (JOI) for both OTH-Gold and Link-16 generation
- Tactical Electronic Intelligence (TACELINT) Message Service

- Keyhole Markup Language (KML) Operational Interface (KOI)
- JTLS Transaction Interface Program (JTOI)
- JTLS Interface Network Navigator (JINN)
- JTLS Order of Battle Editor (JOBED)
- JTLS Geographic Information System (GIS) Terrain Building Program
- JTLS Master Integrated Database (MIDB) Tool
- JTLS Version Conversion Program (VCP)

VCP60 - Converts a JTLS-GO 5.1 database to a JTLS-GO 6.0 formatted database.

VCP61 - Converts a JTLS-GO 6.0 database to a JTLS-GO 6.1 formatted database.

VCP62 - Converts a JTLS-GO 6.1 database to a JTLS-GO 6.2 formatted database.

Instructions for installing JTLS-GO 6.2.4.0 are provided in the *JTLS-GO Installation Manual*. Installing a previous version of JTLS-GO prior to installing JTLS-GO 6.2.4.0 is not necessary. The software provided with this delivery is a complete release that includes all files and code required to execute JTLS-GO.

The basics of installation have not changed significantly, but due to many Cyber-Security improvements, a new Linux RPM package named “xerces-c”, is required to run JTLS-GO 6.2.2.0 and all later versions. The Synapse will not function without this package. Prior to installing JTLS-GO 6.2.4.0, please run the RPM checking script delivered with JTLS-GO to ensure that this package and all other packages are installed as part of your Linux operating system.

1.2.6 Released Databases

This release includes the following sample unclassified databases:

- The scenario that serves as a repository of engineering level data called “repository62”. Although not useful as a scenario, it does follow all of the database requirements for a scenario, and should be loaded into your PostgreSQL scenario table-space.
- The scenario “wespac62”, which is suitable for training and demonstrations.

1.3 INTERFACE COMPATIBILITY

1.3.1 Support Software

JTLS-GO 6.2.4.0 requires the following versions of support software, including operating systems, compilers, scripting utilities, database tools, transfer protocols, and display managers.

- Operating system for the model: Red Hat Linux Enterprise Server (ES) Edition Version 8.7, 64-bit architecture.

JTLS-GO 6.2 has been tested with the following versions of Linux 8:

RedHat Linux 8.7 - this operating system license must be purchased.

Oracle Linux 8.7 - This operating system is free to download, use, and distribute, and is provided in a variety of installation and deployment methods. It has been approved by DISA for use by U.S. Government Agencies.

- There are no restrictions on the operating system for client workstations, except that the operating system must have a Java-enabled web browser. JTLS-GO 6.2.4.0 has been tested on the following operating systems:

Red Hat Linux Enterprise Server Edition Version 7.9, 8.4, and 8.7

Oracle Linux 8.4 and 8.7

Windows 10, which can be used only if the workstation is an external HTTP client of the simulation network.

- JTLS-GO 6.2.4.0 is delivered with the Adoptium project Temurin Java Development Kit (JDK) 1.8 Update 402 package, which is equivalent to the current version of OpenJDK.
- JTLS-GO uses IcedTea to provide the Java Web Start capability that implements the web-enabled JTLS-GO functionality. JTLS-GO supports IcedTea version 1.8.8.
- JTLS-GO database tools require a certified PostgreSQL 11.19 database server and the full PostgreSQL installation. A containerized solution, that fulfills this specification, is provided as part of the JTLS-GO download. It is not necessary to use the delivered containerized solution, but it is the easiest method to meet the requirements of JTLS-GO 6.2.4.0. There are several alternative methods available for obtaining the PostgreSQL 11.19 software. Refer to Chapter 6 of the *JTLS-GO Installation Manual* for additional installation details.
- Windows software, X11R5 server, Motif 1.2 Library, Motif Window Manager: These items are included as part of the supported versions of Red Hat Linux ES.

- TCP/IP is required for inter-process communication between the JODA data server and all user interface programs. The version of TCP/IP included with the supported versions of Red Hat Linux ES is sufficient.
- The Perl script language is used by the JTLS-GO system and game setup scripts. The version of Perl included with the supported versions of Red Hat Linux ES is sufficient. The Perl program is typically located in the /usr/bin directory. If Perl is installed in a another location, a link should be created from the /usr/bin directory to this program.
- SIMSCRIPT III (SIMSCRIPT to C) translator/compiler: SIMSCRIPT is required for recompiling JTLS-GO code. It is not necessary to have a SIMSCRIPT compiler to execute JTLS-GO, because all JTLS-GO software executables are statically linked with the SIMSCRIPT libraries. The compiler is needed only if you are a U.S. Government organization that can obtain source code and plan to re-compile JTLS-GO SIMSCRIPT code.
- ANSI C Compiler: It is not necessary to use a C compiler to execute JTLS-GO. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS-GO component programs. The C Compiler version delivered with the supported versions of Red Hat Linux ES is sufficient.
- C++ Compiler: It is not necessary to use a C++ compiler to execute JTLS-GO. This compiler is used only by U.S. Government organizations that can obtain source code and intend to re-compile any of the JTLS-GO HLA component programs. The C++ Compiler version delivered with the supported versions of Red Hat Linux ES is sufficient.
- The JTLS-GO DDS application uses these open source libraries:

JFreeChart, licensed under a GNU Lesser General Public License (LGPL) by Object Refinery Limited, <http://www.object-refinery.com>

JCommon, licensed under LGPL2.1 (GNU Lesser General Public License version 2.1 or later) by Object Refinery Limited, <http://www.object-refinery.com>

Commons-math3-3.0.jar, licensed under Apache Software Foundation (Apache License, Version 2.0) <http://www.apache.org/licenses/LICENSE-2.0>HLA Compliance

- KML Operational Interface (KOI)

The Keyhole Markup Language (KML) Operational Interface (KOI) server utility enables the model to feed operational simulation data to any version of Google Earth™. The display capabilities and data transfer features of this terrain viewer are sufficiently robust to be used as a base-level operational interface. Operational Players who may be restricted from using an operational Command, Control, Communication, Computer Information (C4I) systems may be able to install and use Google Earth and configure the KOI to provide a capability that resembles C4I for observing perception Force Side data.

Chapter 3 of the *JTLS-GO C4I Interface Manual* describes requirements and procedures for using the KOI capabilities.

1.3.2 JTLS-GO Cybersecurity Compliance

Because of recent incidents of intrusions into software systems, the United States Department of Defense (DoD) has implemented a strong and strictly enforced Cybersecurity program. JTLS-GO, as software that executes on DoD systems, must comply to the mandates of the program, along with all of the third party software used by JTLS-GO, such as PostgreSQL and Java.

JTLS-GO has moved to Adoptium, a full OpenJDK Java environment with licensing alternations allowing an application to deliver the software. The following procedure has been established and approved by the JS/J7 Cybersecurity branch:

- Within days of an Oracle Java security release, Adoptium produces an equivalent version using infrastructure, build and test scripts to produce pre-built binaries of the OpenJDK class libraries. All Adoptium binaries and scripts are open source licensed and available for free.
- Within two-weeks of the Adoptium release, JTLS-GO provides a bug release version (JTLS-GO 6.2.n.0) including a full Version Description Document (VDD) for download to all authorized agencies. All DoD agencies using JTLS-GO will be in full compliance with this specific Cybersecurity mandate as long as they download and use the bug released versions when distributed.

Contact the U.S. Government Program Manager, Ms. Jessica Camacho by email at jessica.l.camacho.civ@mail.mil to obtain the completed Cybersecurity paperwork and a current Gate completion certificate.

As a result of new security requirements built into JTLS-GO 6.2.0.0 as part of ECP JTLS-2022-15976 “Encrypt Passwords To Start WHIP/DDSC”, users must delete **all** pre-JTLS-GO 6.2 scenarios from their \$JGAME directory. This will require you to set up your scenarios from a fresh state:

1. Convert your scenarios to JTLS-GO 6.2.0.0 using the Version Conversion Program (see Chapter 13 of the *JTLS-GO DDS User Guide* for instructions).
2. Perform Option 3, “Setup System For A Specific Scenario”, for each scenario.
3. Perform Option 5, “Run Interface Configuration Program”, for each scenario.

This is **not** a requirement if you have already installed JTLS-GO 6.2.0.0 and are upgrading to JTLS-GO 6.2.n.0 maintenance release.

1.3.3 JTLS-GO High Level Architecture Compliance

The JTLS-GO 6.2.4.0 release is fully High Level Architecture (HLA) compliant, and includes all the programs required to run JTLS-GO in an HLA mode. JTLS-GO currently belongs to one federation known as GlobalSim. GlobalSim is a comprehensive constructive simulation solution for joint training and wargaming that helps commanders and all levels of staff prepare for a range of operational scenarios.

The solution combines JTLS-GO with CAE's GESI constructive tactical entity-level simulation system. CAE's GESI constructive simulation system is designed to run complex and comprehensive exercises from the company level up to division level. The GESI system is used to represent a virtual battlefield, including weapons, vehicles, aircrafts, ground forces and more.

Combining JTLS-GO and GESI brings together operational and tactical level constructive simulations to prepare commanders and staff to make timely, informed and intelligent decisions across the full spectrum of operations, including conventional combat, disaster relief, and operations other than war.

From the JTLS-GO perspective, all software needed to run GlobalSim is included in this delivery. JTLS-GO uses the Federation Object Model (FOM) located in the \$JGAME/data/hla directory. Federation testing of JTLS-GO 6.2.0.0 with CAE's GESI model has not been accomplished. CAE should be contacted concerning the continued support of GlobalSim.

The HLA RTI (Run Time Infrastructure) executive program (rtiexec) recommended for use with this release is Pitch pRTI Evolved 4.4.2.0. However, this program is not included in the JTLS-GO 6.2.4.0 delivery. Users may obtain a full installation package of the RTI software from Pitch Corporation (www.pitch.se). For information about executing the HLA RTI Executive and other HLA-related software, refer to the appropriate HLA documentation and user guides.

1.4 DATABASE MODIFICATIONS

Several database structure differences exist between JTLS-GO 6.2 series and the previous JTLS-GO 6.1 series database structure.

To upgrade your JTLS 6.1 scenario to JTLS-GO 6.2 compatibility, see instructions listed in the *JTLS-GO DDS User Guide*, Chapter 3.1, followed by the instructions in Chapter 13 of the *JTLS-GO DDS User Guide*.

Users should download and re-load their scenarios into PostgreSQL, due to changes made in STR JTLS-2023-16290 PSQL Statement Fails For SVP Warning Correction, included in JTLS-GO 6.2.2.0, which was released in July 2023. This will recreate the related check constraints in the database schema. This procedure only needs to be execute once for every scenario. If the procedure was followed after the release of JTLS-GO 6.2.2.0, it does not need to be followed again,

1.4.1 JTLS-GO Using Legacy Default Symbol Set

If a user organization is still using the pre-JTLS-GO 5.0.0.0 legacy default symbol set, prior to unloading your JTLS-GO 6.2.0.0 formatted data from your PostgreSQL database server into the JTLS-GO 6.2.0.0 scenario American Standard Code for Information Interchange (ASCII) text files, you must execute the JSYMS program using the procedure outlined in the *JTLS-GO DDS User Guide*, Appendix B.11. This procedure will reorganize the structure of the <scenario_name>.gs and databases symbol.scf file.

1.4.2 JTLS-GO Using New Default Symbol Set

The symbol 2525 ID Codes, which are used by C4I systems to identify the type of object, were expanded and refined as part of the JTLS-GO 6.2.2.0 release. If you have scenarios based on the JTLS-GO repository symbols and have not done so since the release of JTLS-GO 6.2.2.0, you are encouraged to update the symbol sets for those scenarios. This can be accomplished by executing the following steps:

1. Go to the \$JDATA/scenario/<scenario_name>/symbols directory. Enter the following command:

```
cd $JDATA/scenario/<scenario_name>/symbols
```

2. Compare your symbol.scf file to the JTLS 6.0 version under the repository62 scenario. Enter the following command:

```
diff symbol.scf $JDATA/scenario/repository62/symbols/symbol.scf_jtls60
```

3. If the files are identical, or if your symbols are a subset of the JTLS 6.0 version, you should update your symbol file (otherwise, perform Steps 4 through 6). Enter the following command:

```
cp $JDATA/scenario/repository62/symbols/symbol.scf ./symbol.scf
```

Your symbol set will now be updated.

4. If your symbol file has additional symbols not found in the JTLS 6.0 version, you can still update your symbol file, but will need to perform a manual integration of the symbol.scf file.

Bring up the jsyms program for your scenario, by selecting Option 1 "Prepare or Alter a Scenario Database", and then Option 5 "Configure Symbols", from the JTLS Menu.

5. Perform a save in the jsyms program. Selecting "Yes" will update the <scenario_name>.gs file, and update the graphic symbols in the DDS if the scenario is loaded; selecting "No" will only update the <scenario_name>.gs file.

If your scenario is not loaded into the DDS, the next time you perform a load the updated symbols will be loaded from the <scenario_name>.gs file.

6. Exit the jsyms program.

1.4.3 Standard Repository Changes

R&A has continued to improve and expand the unclassified data repository, which has been renamed to “repository62”. The DDS comparison and synchronization function can be used to determine if any of the changes delivered are of use to a JTLS-GO user organization.

1.5 INSTALLATION

The *JTLS-GO Installation Manual*, a Portable Document Format (pdf) file available for direct download, is part of this JTLS-GO delivery. It provides detailed instructions for installing the new version of JTLS-GO and the installation of PostgreSQL 11.19 required to operate JTLS-GO 6.2.4.0.

2.0 ENGINEERING CHANGE PROPOSALS

This chapter summarizes model capabilities added to JTLS-GO 6.2.4.0 as a result of implementing authorized minor Engineering Change Proposals (ECPs).

2.1 JTLS-2023-16511 Change AAR Time Field Default Value

Summary of Model Change Request

It is often desired to have the time field value in the AAR orders initially set to the game start time instead of the current game time. This change will allow a more intuitive manner of selecting the reporting time range.

Design Summary

The time field values in the AAR orders have been defaulted to the game start time.

2.2 JTLS-2024-16528 Allow Users To Select Model Run From TRIPP

Summary of Model Change Request

The typical method used to play back run data from the simulation is to have the TRIPP access the data of the active run. The active run is the most recently saved run data from the simulation. However, the TRIPP does have the ability to display the playback of any of the currently available model runs.

The problem with this method is that the current simulation must be stopped and restarted from the desired run for the TRIPP user. It is not practical to stop the simulation for an exercise and start from a different run, and if there are several TRIPP users, each one may require a different run playback.

Design Summary

The data for each run is available even when the simulation is actively being executed for one of the runs. The TRIPP now has an option selector from which the user can select the desired run that should be replayed.

2.3 JTLS-2024-16574 BDA Killer Assessment And New Detection Reports

Summary of Model Change Request

Two new AAR reports were requested during an exercise:

- A report that lists all new Naval detections within the last thirty minutes, and

- A report that provides a good assessment of damage inflicted by a unit and its owned objects (targets, air missions, HRUs).

Design Summary

Two new reports were generated to provide this information to the users: the New Detection Report and the BDA Killer Assessment report.

The existing Battle Damage Assessment report provided BDA grouped by victim instead of killer, and was not suitable for the new requirement, so the new BDA Killer Assessment was created. The existing Battle Damage Assessment report was renamed the BDA Victim Assessment report to remove any confusion.

Additionally, changes were made to the XML properties file of all reports, which provide language specific text for internationalization, to move the column names from integer references to text references, thus making it easier in the future to add columns when needed.

2.4 JTLS-2024-16585 Add Owning Side To OPAREA IMT Screen

Summary of Model Change Request

It would be useful to see the name of the Force Side that owns an OPAREA on the IMT.

Design Summary

This information was added to the IMT screen.

2.5 JTLS-2024-16586 Add Operational Medium To Naval Unit IMT

Summary of Model Change Request

Users at an exercise requested the ability to view only submarines on the Naval Unit IMT.

Design Summary

The Operational Medium of a Naval Unit was added to the IMT. This allows for viewing and filtering of the Operational Medium of each Naval vessel. Submarines can be viewed by selecting SUBSURFACE on the Operational Medium filters.

2.6 JTLS-2024-16587 Add ATO Quick Filter To Air Mission IMT

Summary of Model Change Request

Users at an exercise requested the ability to select a mission in the Air Mission IMT and quickly view all missions in the original mission's ATO.

Design Summary

The ATO quick button has been added to the Air Mission IMT.

2.7 JTLS-2024-16588 Synapse WHIP/TRIPP Lists In Table Format

Summary of Model Change Request

The Synapse writes the current status of WHIPs and TRIPPs to the Web Services Manager as plain text. It would be better to display this data in a sortable table format.

Design Summary

The Synapse has been updated to write its WHIP and TRIPP info pages as tables instead of plain text.

3.0 SOFTWARE TROUBLE REPORTS

Software Trouble Reports (STRs) describe software code errors that have been discovered by JTLS-GO users or developers and have been corrected.

3.1 JTLS-2023-16437 Crash Removing HRU From Game

An HRU was killed via an Assess Weapon Damage Event. The model crashed while removing the unit from the game because its Side Info Array did not exist.

The HRU's perceived information data, which is held in the Side Info Array, was deleted early in the code logic used to remove the HRU from the game. Fairly late in the logic sequence, it was possible for the code to request the perceived information, and the model crashed because the information was no longer available. The removal of the Side Info Array was moved down in the logic sequence.

3.2 JTLS-2023-16440 Squadron Placed In Minefield When Ship Sinks Crash

A naval unit was being removed from the game due to hull damage. The model automatically allows any onboard helicopter squadrons to be moved prior to sinking. This is done instantaneously if the user did not provide the squadron instructions to vacate the ship. The model crashed when the squadron was moved to a land location with an undetected minefield.

The squadron did not have any tasks since it was magically placed in the minefield. When attempting to determine if the current squadron task would exempt it from damage, the model crashed because there was no current task. The logic was changed to consider this possibility.

3.3 JTLS-2023-16441 AAR Report Improvements

Numerous enhancements and corrections to AAR reports were required to more efficiently collect data:

- **Target Category/Subcategory and Unit Type filtering was not working for the Target Damage History report, the DSA Collection Report, and the Collection Report.**
- **The Air Loss History Report and the Air Surface Damage Report had filtering by geographic region added.**
- **The Air Loss History Report had the ATO ID and Mission Call Sign added.**
- **The Weapon Usage Report had usage by command hierarchy added.**
- **The Supply Usage Report had filtering by Supply Category added.**

- **The JXSR, though designed to allow use by AAR Report orders, was not reading the proper directory.**

The JXSR was modified to read the proper directory for the AAR Report XML files, and was modified when loading a standard JXSR, vs a replay JXSR, to load both the \$JGAME/data/orders and the \$JGAME/data/aar/orders. This allowed JXSR structures to be used in the report XML files, for retrieving Supply Categories and for using a better Target Category/SubCategory utility filter.

With this improvement the Target Category/Subcategory Unit Type/Subtype filters were properly implemented. Geographic regions were added to the reports requiring them. The ATO ID and Call Sign were added to the Air Loss History Report. The Weapon Usage Report had usage by command hierarchy added. The Object Dynamics library had the ATO ID and Call Sign added as AAR data that can change over time.

A minor error was fixed in the Object Hierarchy library code that affected traversing upwards in a command hierarchy.

3.4 JTLS-2023-16442 Cannot Shutdown TRIPPs From Synapse Console

The Synapse console has a command to shutdown WHIPs, but not to shutdown TRIPPs.

The shutdown command was modified to allow the user to either shutdown a WHIP or a TRIPP.

3.5 JTLS-2023-16443 Order Spreadsheet Lacks Option For Fire Missile

An attempt was made to display the Fire Missile Target Order Spreadsheet from a Player WHIP. A new Order Spreadsheet was created, but when the user selected Add Order Table -> Ground -> Fire -> Fire Missile, the only option available was DEFAULT. The Target option was not available.

A test revealed that the problem also existed when selecting Add Order Table -> Naval -> Operations -> Fire Missile.

The order file FM.xml has the following five spreadsheet types defined: "DEFAULT", "Location", "Unit", "Target", and "ACM_Area".

Checking the menu files revealed, that in both files, "DEFAULT" was the only item listed under the Fire Missile labels. The missing items (Location, Unit, Target and ACM Area) have been added under the Fire Missile labels.

3.6 JTLS-2023-16444 ATO ID And Call Sign Not Visible On AAR Viewer

The ATO ID and Call Sign have been added to the AAR AIR MISSION table, but do not appear with the air mission on the AAR Viewer.

The AAR Viewer code has been expanded to include the ATO ID and Call Sign.

3.7 JTLS-2023-16451 Make Combat System Name Visible On IMT

A Combat System has two names: a Combat System Name and a Specialized Name. Only the Specialized Name was visible by default on the Combat System IMT screen. Both Names should be visible by default on the Combat IMT Screen.

The Combat System IMT screen was changed so that the Unit Name, Combat System Name, and Specialized Name are all visible by default. The Unit Name and Combat System Name columns were frozen, so that they are now always visible as the user scrolls across the IMT screen.

3.8 JTLS-2023-16452 Erroneous ECP Entry In VDD

The JTLS-GO 6.2.1.0 Version Description Document VDD erroneously stated that ECP JTLS-2023-16097 “Configure Customized Shape File for WHIP and DDSC” was a new feature in the release. However, this ECP has not been implemented yet.

This ECP will be implemented in JTLS-GO 6.3.0.0.

3.9 JTLS-2023-16453 Erroneous Great Circle Distances

It is possible for the Great Circle algorithm to return very large distances (greater than the circumference of the earth) when two locations are within one meter of each other, because of rounding problems.

There was already code in place to protect against erroneous calculations between locations within ~15cm of each other, and to use a simplified calculation in such situations. However, the erroneous distances were seen with locations ~20cm apart. The code was modified to use the simplified algorithm when the two locations are within one meter of each other.

3.10 JTLS-2023-16464 Terminate Overwatch Routine Missing Logic

There was a logic error in the routine TERMINATE.OVERWATCH. The routine lacked code to handle cases where an Overwatch task is canceled by the Player.

The missing code was added to the routine, and the corresponding message file was changed to add the appropriate message for that case.

3.11 JTLS-2023-16465 Upgraded SSH Host Key Algorithm

The older (but still valid) SSH host key algorithm was used in creating SSH tunnels, which prevented the JTLS-GO web game from working properly. The web game servers were not configured consistently to prioritize IPv4 lookup, which causes the Web Services Manager (WSM) to incorrectly interpret server IP addresses.

The newer SSH host key algorithm was added to the Web Services Manager code. This also forces the WSM to use IPv4 lookup.

3.12 JTLS-2023-16466 Tighten Apache Password Protection

Some JTLS-GO components used by the JTLS-GO web game were not password-protected.

The Apache configuration was tightened to provide complete password protection to all components. Support to optionally plug-in non-ICP/DCP-managed Apache configurations was also added.

3.13 JTLS-2023-16470 CEP Endless Loop GREAT.CIRCLE.LEAVE

The CEP entered an endless loop trying to ensure a unit's latitude was less than or equal to 90.0.

The value causing the problem was exactly 90.0, but the code only checked for less than 90.0. The code was modified to check for latitudes that are less than or equal to 90.0.

3.14 JTLS-2023-16471 SIP Crash Generating Online Player Manuals

The Scenario Initialization Program (SIP) crashed while generating Online Player Manuals from a checkpoint. The SIP was attempting to read the target ASCII data when the crash occurred.

When taking a checkpoint, the CEP writes out the ASCII checkpoint data for targets. The CEP write code was modified to include some additional data fields, but the corresponding code in the SIP was not changed to match. Code corrections were done to address the differences.

3.15 JTLS-2023-16472 Naval Formation Merge Crash

The CEP crashed as one naval formation was merging with another. The crash occurred while the model was attempting to send a message to the reporting function.

The code was attempting to access an attribute of the pending execution task (PET) but the PET had already been destroyed. When the last ship in the old formation merged with the new one, then the old formation was destroyed and all of its tasks (PETs) were deleted. The code was modified to maintain a copy of the original task so the message could be sent to the intended recipients.

3.16 JTLS-2023-16474 Mismatched NEC-CCIS Enumeration Values

When airbases were closed during execution, the CEP published closure codes on the JODA. These integer codes were used by the JTOI to report on the reason for base closures in the Northern European Command, Command Control Information System (NEC-CCIS). The meanings of the integer values published by the CEP did not match the meanings used by NEC-CCIS. For example, the integer "5" was published on the JODA which was defined as closure due to a Logistics Issue in the CEP. However, in NEC-CCIS, this integer meant a Navigational Aid Failure.

The mismatched enumerations resulted in unexpected closure reasons on the NEC-CCIS. The enumerations in both the CEP and JTOI NEC-CCIS were updated to utilize consistent values.

3.17 JTLS-2023-16475 Embarking Moving Unit Onto Formation Crash

A Controller magic-moved a ground unit onto a naval formation as an embarked asset. This unit had existing move tasks in its pending set. After the magic move was complete, the model crashed when the ground unit attempted to continue its ground movement.

To correct this problem, the code was changed to force a clear all existing tasks when a unit was to be embarked on a formation via a magic move.

3.18 JTLS-2023-16477 Link 16 Tracks With Illegal Letters Generated

Link 16 tracks should not contain the letters "I" and "O". If a track block includes track numbers that will generate a track name with the letters "I" or "O", the model is not skipping the illegal names.

The code to find a track block did not skip over illegal names. Thus a track block such as CH000 to CJ777 would incorrectly allow a track block with a name of CI123. The model now skips over these track names.

3.19 JTLS-2023-16480 Terrain Masking Interfering With OTH Radar

An Over The Horizon (OTH) radar operates by bouncing the radar beam off the ionosphere. This allows the sensor to see over the radar horizon, which represents the curvature of the earth. If an OTH sensor can see beyond the radar horizon, intervening terrain should not cause a problem. Terrain causes clutter and would interfere with ground detections, but the terrain should not stop the sensor from detecting aircraft.

For air mission detections, the Terrain Masking algorithm is now skipped for OTH Sensors.

3.20 JTLS-2023-16481 Building Route for TGF Move Crash

The CEP crashed while attempting to build a route for a unit which was moving in a Task Group Formation (TGF). The model was attempting to access information from the first PET for the unit, and that PET did not exist.

A Player was actively interacting with the unit tasks and deleted the movement task without removing the unit from the TGF. As a result, the unit had no first task. The code was modified to ensure the PET was not null before attempting to get an attribute from the PET.

3.21 JTLS-2023-16483 Saving HRU Data In Checkpoint Crash

The CEP crashed while writing HRU data in a checkpoint. The specific HRU had no combat systems assigned to it.

The order to create an HRU had options to use a different set or a modified list of combat systems. Each of these options used a different utility panel on the WHIP. The definition files for

these two utility panels used two different order fields when accessing the names of the combat systems to be used by the HRU. The CEP code was correct for one, but did not match the other. This resulted in a problem with assigning the combat systems.

One of the utility panels was modified to use a consistent order field. This utility was only used by the Create HRU order.

3.22 JTLS-2023-16485 Improve SVPR Warning Messages

The messages for SVPR Warnings 1332 and 1334 need to be improved to provide a better description of the problem.

Warning 1332 and 1334 were both missing the target category for the load assignment. The target category has been added to the messages.

3.23 JTLS-2023-16486 Foreign Airbase Removal Canceled Mission

Two airbases were co-located in the same terrain grid. One was on the blue side and one was on the green side. The green airbase had several missions on ground alert. The Controller removed the blue airbase from the game using the TPFDD order. The green air missions were unexpectedly canceled.

When an airbase was removed from the game, the model handled current missions on the ground by allowing them to scramble or canceling them. This process occurred for all missions at that location and did not look at the force side of the missions. A check was added to ensure that only same-side missions were considered when an airbase was removed from the game.

3.24 JTLS-2023-16488 Assessing External Air Combat Crash

The CEP crashed while an air-to-air fight occurred between an air mission controlled by the MUSE UAV simulator and an internal JTLS-GO mission.

The crash occurred in the event to Assess Air Combat. It was a divide by zero error. The external (MUSE) air mission had already been destroyed by the JTLS-GO mission, but the external mission had not yet been removed from the game. The CEP was attempting to calculate the probability of damage which used the current number of aircraft in the denominator of the equation.

A check was added to avoid this computation when there were no remaining aircraft in the mission.

3.25 JTLS-2023-16489 SVPR Warning 1451 Correction

Warning 1451 is triggered when a SUP is considered aircraft-capable, but has a maximum aircraft capacity of zero. Warning 1451 should have the option to set the value of MAX_AIRCRAFT_CAPACITY for a unit.

An automatic correction for Warning 1451 has been added to set the MAX_AIRCRAFT_CAPACITY to 1.

3.26 JTLS-2023-16490 SVPR Warning 1425 Correction

Warning 1425 is reported when a unit has excess CL.VII supplies to support its combat systems. The code allows for no more than 1% of excess. Carrying excess CL.VII supplies might enable the unit to instantly replace damaged or destroyed combat systems. Warning 1425 should have the option to set all CL.VII supply values as recommended.

An automatic correction for Warning 1425 has been added to set all CL.VII supply values to the recommended amounts.

3.27 JTLS-2023-16491 Inappropriate Mission Code Mapping

The ATO Mission codes “INT” and “TRNG” are inappropriately mapped.

Code “INT” was translated as an OAS mission. The documentation indicated INT should be an intelligence gathering mission, and was changed to “REC”.

Code “TRNG” was translated as a TRANSFER mission. “TRNG” is a training mission and the best representation, given the data that would be available in the ATO message, would be a “REC” mission.

3.28 JTLS-2023-16492 SVPR Warning 1458 Correction

Warning 1458 is created when an ICAO code is greater than 4 characters. The user may wish to just remove the ICAO code, rather than have the model use what may be an invalid code. Warning 1458 should have the option to remove the unit ICAO code.

An automatic correction for Warning 1458 has been added to set the ICAO field to NULL.

3.29 JTLS-2023-16494 ATO Parser Not Using Altitude From ACM Polygon

ATO messages may provide usable Air Control Measure (ACM) air spaces whenever an AMSNLOC record contains a series of location points for a mission. The points, along with any altitude associated with them, are stored as one of the ACMs in the XML that is provided to the ATO Translator. However, the Parser is not providing the altitude for some of these ACMs.

The Parser reads all the AMSNLOC fields and discovers all the points, and altitudes, provided in the record. When a name is also provided, the Parser processes and stores the altitude, but this altitude value gets overwritten with a bad value when the Parser begins to read the associated location points.

The Parser was modified to discover the altitude and store it, regardless of the other data provided in the fields of this AMSNLOC record. This makes the proper altitude available when the Parser begins to write the ACO XML for the Translator.

3.30 JTLS-2023-16496 Attacked Moving Unit Delay Issues

A logic error was generated when the model attempted to update the Next Move Time for a delayed ground unit that had just been attacked by artillery. As a result, the Next Move Time was not updated in the Sitrep. During a later artillery attack, the resulting Unit Damage Report estimated the unit would be delayed thirty minutes. However, the unit continued to move normally as scheduled.

The logic error was caused by an error in the code statement that updates the Next Move Time in the JODA. The statement was attempting to update the Next Move Time using the Send Update argument instead of the combined Set and Send argument. The error was corrected so that the Next Move Time is now updated when a ground unit move is delayed by air or artillery strike. Note this issue did not apply to non-delayed unit movement.

The estimated delay time was incorrectly included in the Unit Damage Report even when the unit was not delayed. To correct this error, the write statement was relocated inside the logic to print only when the unit is actually delayed by air or artillery strike.

3.31 JTLS-2023-16497 Attempting To Transfer Target Crash

The CEP crashed when a Player submitted the Transfer Target order. The order intended to transfer a target from one naval unit to another unit.

On the order panel, the Player specified that a Naval route be used when transferring a target, but no route points were specified on the order. The model crashed while trying to assign a route where there were no specified points. A constraint was added to the order panel, and a check was added to the model to prevent this problem from recurring.

3.32 JTLS-2023-16499 Various AAR Report Format Inconsistencies

- 1. In the Aircraft Kill Summary Report, the “Other” column is formatted as a real number (“2.0”). It should be formatted as an integer (“2”) because all the other columns in the report are formatted as integers.**
- 2. In the Air Surface Damage Report, the Number Damaged and Number Killed columns are formatted as real numbers. They should be formatted as integers.**
- 3. In the Air Loss History Report, the Number Damaged and Number Killed columns are formatted as real numbers instead of integers.**

4. The report title for the Battle Damage Assessment Report is “Object Damage Report”. There is a separate Object Damage Report, so the BDA Report should be titled “Battle Damage Assessment Report”.

The format inconsistencies have been corrected in the AAR tables.

Note - the combat system losses in the Air Surface Damage Report will be formatted as integers if the user specifies that only combat system losses are to be reported. If the user specifies that supply losses are to be included in the report, both combat system and supply losses will be formatted as real numbers. This is because the system and supply losses are held in the same field of the temporary table set up to collect the data. This field has to be a real type because fractional supply losses can occur.

The incorrect title of the BDA Report occurred in the output format O2 report only. The output format O1 report had the correct title.

3.33 JTLS-2023-16501 Handle Polar Bearing Calculations

A crash occurred when an AWACS was running away from an interceptor and heading towards the North Pole. Eventually the AWACS was essentially at the North Pole and still heading north, and needed a new location in that direction, which caused a mathematical exception in the Arc-Tangent calculations.

Code was put in to check if a bearing and range calculation is close to either pole, then the destination should jump to the other side of the pole.

3.34 JTLS-2023-16502 AAR Report Issues

1. The Air Loss History Report for missiles was not returning any report.
2. The Weapon Damage Report for a killer target was also not returning a report.
3. The Weapon Usage Report for a unit was returning all damage rather than just damage by the unit.

The Air Loss History report for missiles was missing a couple columns in the retrieval stage that the code then attempted to access, causing a crash. The Weapon Damage Report for a target did not create an Object Hierarchy though one was expected to properly credit missiles to their firing SSM. The lack of the Object Hierarchy resulted in a crash. The Weapon Usage Report had an error when filtering by the owning object which allowed all objects to pass the filter. The errors in all three reports were fixed.

3.35 JTLS-2023-16503 LC2IS Retrieve Echelon From Unit

The echelon level for a unit was changed, but the LC2IS Message Service was still reporting the old echelon level.

The LC2IS Message Service (LC2MS) used the 2525 ID Code from the unit's graphic symbol to determine the echelon of the unit. This was not being updated when the Controller changed the echelon. This error had already been fixed in a newer version of JTLS-GO, but the LC2MS already had the echelon from the JDS Protocol and did not need to extract it from the graphics symbol. This was determined to be a cleaner implementation and the code was modified accordingly.

3.36 JTLS-2023-16504 Units Not Adjusting Posture When Damaged

Units that were in a Hasty Defense posture were being degraded but were not adjusting their posture, including to Wiped Out. Then overnight, when combat operations were suspended, the units would reconstitute.

The code was not adjusting posture for Lanchester damage inflicted on units that were in Hasty Defense. The code was modified to add Hasty Defense as a posture that should trigger an evaluation of current strength versus current operations.

3.37 JTLS-2023-16507 SEAD Suppression Crash

The game crashed when attempting to reserve an array to hold potential enemy Air Defense Targets to suppress. There were no such viable targets so an array of zero length was requested, which always results in a crash.

An earlier part of the code was designed to catch the situation without any viable enemy air defense targets but had a minor error in it where a local variable was not being reset inside a loop. This error was corrected.

3.38 JTLS-2023-16508 Combat System Summary Files Not Copied

When moving a fake checkpoint, which does not consist of any saved model data but does have enough information to permit a push, to the shadow server, the get checkpoint script complained about a missing combat system summary directory.

The combat system summary directory was not moved into the checkpoint directory as part of the fake checkpoint procedure. The script that is responsible for creating the fake checkpoint was modified to move the directory and create a new empty one under the scenario.

While testing this change, it was discovered that when dealing with more than 10 checkpoints in a run the script was only picking up the first digit, which was corrupting the resultant run file for the scenario. This issue was also fixed.

3.39 JTLS-2023-16510 Update To Copyright Name

The "R&A LLC" copyright name required updating.

JTLS-GO version 6.2 and above will have the copyright name updated in the WHIP, TRIPP, and DDSC splash screens, and in each application's About dialog. The copyright name was changed to "ROLANDS & ASSOCIATES A Valkyrie Enterprises Operation".

3.40 JTLS-2024-16512 Group Moves Stopping At Way Point After Restart

If a checkpoint is taken when a group move with multiple legs is in progress, then on a restart the entire group move stops at the next way point once all units have arrived, instead of continuing on to the next leg of the move.

As each unit arrives at the way point, they check their current task to determine if they are part of a group move. If they are, designated by the task pointing back to the lead unit, this triggers the lead unit to check if all following units have arrived and, if so, to start the next leg of the move. Of course, if the lead unit is the last to arrive the same process is followed.

This was not happening on a checkpoint restart because the task for the follow-on units had the lead unit specified, but not the type of the pointer. This prevented the restart from re-associating the task with the lead unit on a restart.

While finding this omission, two other places in the code were setting or zeroing the associated entity without setting the object type. While these additional omissions did not produce any issues, the code was changed to explicitly set the object type for cleanliness.

3.41 JTLS-2024-16513 Changing Catastrophic Kill Time Crash

If during game play, the Controller changes the Catastrophic Kill time, the model can crash while processing the rescheduling of existing Wreckage Disappear events.

The code was changed to cancel all events and place them into a holding array. Once all existing events are canceled, the model now reschedules them at their new appropriate time.

A similar problem was found when rescheduling Wreckage Disappear events when terrain is changed to an Ocean terrain type.

3.42 JTLS-2024-16516 Posture Does Not Improve After Strength Increase

The Controller Change Unit order was used to reduce a ground unit's strength to 25%, which was below the "Incapable" strength threshold for the unit's TUP. The unit's posture changed to "Incapable" as expected. The unit's strength was then increased to 75% by the Controller, which was greater than the "Defend" threshold, but the posture incorrectly remained "Incapable".

Logic exists in the model to adjust a unit's posture downward when its strength decreases, but no such logic existed to adjust a posture when a unit's strength increases. The missing logic was added so that the posture is improved when the unit strength exceeds a TUP threshold.

3.43 JTLS-2024-16517 ELS Combat System Documentation Error

In the JTLS-GO Data Requirements Manual, the definition for the data parameter CS ELS PROTECTED FLAG was wrong. It had a value which was cut and pasted from a different parameter.

The definition was incorrectly assigned to be the definition for the data parameter CS ELS LIFT FLAG. The text in the Data Requirements Manual was corrected to include the proper definition for CS ELS PROTECTED FLAG.

3.44 JTLS-2024-16519 Geo-Regions With Periods In Name Did Not Filter

Whenever a geographic region was created with the period (".") character in the region's name, applying that region to an IMT did not filter the data.

Having the "." character in a geographical region's name is allowable, and the change has been made to correctly filter IMT screens when applying regions with periods in the name.

3.45 JTLS-2024-16520 ATO Parser Does Not Discover Mission Role

In the NATO Integrated Command Control (ICC) Air Tasking Order (ATO), the role for a mission is the intended mission type, and is contained in an AMPN record that follows the AMSNDAT record. The ATO Parser is getting an erroneous mission type for a mission in the ICC ATO when two or more AMPN records follow the AMSNDAT record, and the last one does not contain the actual role for the mission.

The identifying token "MSNROLE" within the AMPN record was not being used by the Parser to further determine the role within this record. When there are several AMPN records, the Parser tries to obtain the role from the last record, which may simply be extra comments regarding the mission, rather than a specific role. The Parser was simply trying to obtain the role from the last AMPN record, which was successful if there were only one AMPN record.

The Parser was modified to search within the AMPN record for the "MSNROLE" token before obtaining the role.

3.46 JTLS-2024-16521 ATO Parser Altitude From AMSNLOC Record

Whenever the altitude is provided within an AMSNLOC record for a mission, and the named location appears in the ACO, the Parser sometimes gets a zero altitude for the defined airspace.

Whenever the altitude is provided within an AMSNLOC record for a mission and the named location appears in the ACO, the Parser would then check for location points in later fields of this record. These point would be used to redefine the geometry of the named location in the ACO. However, when this happens, the Parser would then read the altitude field improperly, resulting in a zero altitude. This has been fixed.

3.47 JTLS-2024-16522 ATOT Repeating Routing Points

Whenever a mission in the ICC ATO uses more than one ACM Corridor as an ingress or egress route and the user selected the option to not use ACMs, but to translate the orders using specific locations, the Translator generates a corresponding route that duplicates some of the routing points along the route.

The model cannot handle the linking of several ACM routes for a single route such as an Ingress or Egress. This problem was found because the ATO contained several of these complicated ACM linked routes. The only option was to stop the translator from using ACMs and to have it generate orders using the old location methodology.

The Translator logic was modified to properly generated the location-based routes when multiple ACM routes are specified in the ATO.

Allowing the ability to link multiple ACM routes for a single Ingress or Egress route has been moved to an Engineering Change Proposal and will be implemented as part of JTLS-GO 6.3.

3.48 JTLS-2024-16523 ATOT Fails To Report Error 506

The ATO Translator sometimes does not report Error 506, “Mission incompatible With Database Load Assignment Array and TTL Defaults linking”. This happens in the case of a mission with no defined Target Type List, for example, no TGTLOC record.

The Translator was only checking the Target Type List obtained for the mission from the ATO. It was not checking the Target Type defaults linking for the default target type.

The Translator was modified to include a check of the defaults when the defined target types have not been defined. When this error is reported, it is important for the user to check the Target Type linking list for the target type defaults. It may be unassigned or it may be incorrectly assigned for the mission type. Look in the ato_constants linking for the default Target Type by mission types.

3.49 JTLS-2024-16524 ATOT Mobility Mission Rearm And Refuel Options

The Translator generates orders for mobility missions from the ATO, but when the mission is suppose to land at an air base as part of its tasking, the utility does not properly include the options to rearm and refuel.

The Translator was assuming all landing missions would land at a location rather than an air base.

The Translator was modified to determine whether the landing site was a location or an air base and properly arm/refuel at all air base sites.

3.50 JTLS-2024-16525 ATOT Improper Option For Orbit Polygon

The Translator does not properly configure the OAS Mission order whenever the mission is orbiting a polygon area and the option write orders without using ACMs has been selected.

The Translator now has a user option button to decide whether to write orders using ACMs or a list of location points. With the option to use points, the Translator was using the wrong index in the order to indicate the orbit was a polygon of points.

The Translator code used to write the index number was changed to the correct index number when using points in generating the order.

3.51 JTLS-2024-16526 Convoy Supplies Not Initialized

After a game restart, supplies owned by convoys were not initialized and cannot be viewed in the IMT.

The Convoy Supply initialization routine was expecting the convoy supplies in an old data structure. The code was corrected to use the new data structure.

3.52 JTLS-2024-16529 MUSE Fired Weapon At Destroyed Entity ELS Crash

The ELS crashed when the external model MUSE fired a weapon at a combat system entity which was already dead.

The ELS logic did not properly handle the case when the targeted entity was already dead. The ELS was attempting to access an attribute for the wrong class of object. The code was modified to correctly process weapon fire against a destroyed entity.

3.53 JTLS-2024-16531 ELS Crash While Deleting HRU

An HRU was deleted in the aggregate model, which caused the ELS to crash. The reason for the crash was associated with accessing an attribute of a destroyed entity.

The ELS code was attempting to access an attribute of an object used to hold priority information for entities. This object was deleted prior to the crash. The code was modified to zero out the attribute, which prevents the crash from occurring.

3.54 JTLS-2024-16533 Emitter Intel IMT Screen Has No Geo Filter

The Emitter Intel IMT screen did not have the Geo Region filtering capability.

The screen definition file was changed to provide region filtering on the screen.

3.55 JTLS-2024-16534 SVP Missing Link-16 Error

The SVP is supposed to report if the database assigns any Link-16 data to an object without specifying the Link-16 network to which the object belongs. The code to do this did not check whether the unit has Mission Link Blocks specified. A squadron with database-specified mission link blocks but no Link-16 network specified was not being reported as an error.

It is now properly caught as an error and is being reported.

3.56 JTLS-2024-16536 Overlapping TPFDD With Subordinates Crash

The model crashed when a user asked to TPFDD in a unit and all subordinates and then immediately submitted another order for another unit higher up the command chain to do the same thing. The model did not check that all units down the command chain were in fact out of the theater.

The code was corrected to make this check for all units in the command chain.

3.57 JTLS-2024-16538 TPFDD To New Base Used Old Location

A user changed a squadron's TPFDD data. The change included having the squadron arrive at a different home base than originally planned without changing the squadron's arrival location. Although this is documented as such, the model should be changed to also change the squadron's arrival location to match its new assigned home base

This model change was implemented.

3.58 JTLS-2024-16541 Magic Air Ops Clears Mission Complete Task

The model crashed when a user submitted a Magic Air Ops order that told the mission to reestablish its flight path, and the mission's current task was an automatic move to its Mission Complete Task. The model logic did not consider this set of circumstances, which cleared the automatic move and the Mission Complete task. This resulted in the mission to have no tasks and caused the crash.

The situation is now properly considered.

3.59 JTLS-2024-16542 Acquired Air Task Intel Message Does Not Parse

JTLS-GO has a process in which a Communications Intelligence sensor can pick up information concerning order transmissions that are acquired by this capability. If an acquired order contains Air Control Measure information, the resulting intelligence message cannot be read due to an error in the generated XML file.

The problem was corrected.

3.60 JTLS-2024-16544 Logic Error C4I Processing Event

When a naval unit is stopped, it is supposed to start a process that will report its location and status periodically to the Common Operation Picture (COP). Only one of these reporting events should exist on the event list for a given ship. To ensure this is true, the model makes two checks:

- If a naval unit stops, the COP reporting process is supposed to start. Before starting, the model checks if the reporting process is already ongoing. This situation indicates that the reporting process was not properly stopped when the ship started its previous move.
- If a naval unit starts moving, the COP reporting process is supposed to stop, because the COP is automatically updated each time the ship moves along its route. Before stopping the process, the model checks if the reporting process is running. If it is not, that means that the process was not started the last time the naval unit stopped. This can cause time late updates for the naval unit on the COP.

Under both circumstances, the model reports the problem as a Logic Error. It is not a serious situation, but the cause of the situation should be found and fixed to improve model efficiency.

During a recent exercise, a Logic Error was generated each time a naval unit had to change its movement instructions to start a new route to a new station location. This change route process properly stopped the C4I process when the ship was stopped to compute a new route, but it was not properly started when the ship restarted its move to the new station location.

Correcting this problem stopped the majority of Logic Errors for the management of the C4I process, but not all of them. The Development Team will continue to track down the situations that lead to the generation of these Logic Errors.

3.61 JTLS-2024-16546 Crash Splitting Runaway Mission

The model crashed when a user split an air mission while it was in a “Run Away” posture. The model inappropriately scheduled two moves for the split mission under this circumstance, which eventually led to a crash.

The split logic now handles this situation correctly.

3.62 JTLS-2024-16548 Crash When Task Had No Associated Object

The model crashed when encountering a task that indicated there was an associated object, but for which no associated object name actually existed.

The situation did not replay and has not been solved. Instead, a Logic Error was created and the task canceled. When it happens again, the Development Team will be able to better debug the situation.

3.63 JTLS-2024-16551 Assess Mine Damage Crash

It is possible that a ground unit with no manned combat systems enters a land minefield. Although an unusual circumstance, it is possible. The model crashes when attempting to determine the land mine damage to the unit.

The model now checks for this circumstance and determines that no further damage to the unit is possible.

3.64 JTLS-2024-16552 Modify OPAREA Without Redefining Polygon Crash

The model crashed if the user enters a Modify Operations Area order and does not specify a new polygonal area. The code always assumed that a modification to an OPAREA would always include new points.

The model now checks whether the polygon is being redefined.

3.65 JTLS-2024-16553 Save Air Mission Spare Attribute

JTLS-GO is built with what is known as an Air Mission Spare attribute. If there is an error for which we need to save some previously unknown information, this unplanned information can be put into the spare attribute. Although this spare attribute is a good idea, it is currently not saved as part of the checkpoint process. This greatly reduces its usefulness when and if it is needed to solve an emergency situation.

The variable AM SPARE is now a part of the checkpoint files.

Note: This means that any existing checkpoints from previous versions of JTLS-GO 6.2 that include Air Missions cannot be used to restart the game.

3.66 JTLS-2024-16554 Improve Mission Egress Route Selection

When a mission is told to cancel its mission, the model attempts to find the best egress route to follow. The model did not count on the possibility that a user input an oddly planned egress route in which the route was getting closer and then further away from the home station. This situation is now considered to better find an appropriate egress route home for a canceled mission.

The mission now follows the egress route that continually takes it closer to its home squadron.

3.67 JTLS-2024-16557 Crash Magic Moving Submarine In Port Shelter

The model crashed when a user entered a Magic Move order for a submarine that was in port and inside a Submarine shelter within that port.

The situation is now considered and the problem was solved.

3.68 JTLS-2024-16558 TPFDD Port Unit JODA Data Inaccurate

If the user submits an order for a unit to TPFDD into the theater through a port, the JODA-held task information does not properly reflect the name of the unit that is being processed.

The unit name is now properly passed to the routine that updates the JODA.

3.69 JTLS-2024-16560 JODA Warnings When Updating ACM Shape

When the user alters an ACM shape, several JODA warnings could be generated.

The problem was solved by correcting the manner in which the information was sent to the JODA.

3.70 JTLS-2024-16561 Inventory Owner Recipient Should Be Saved

As part of the expanded AAR logistics reporting, a new attribute was added to an Inventory Item record called the Supply Recipient. This is a pointer to the object that is receiving the supplies. It is only needed by the process that reports the usage of supplies to the AAR, but it was being saved as part of the ASCII checkpoint code. A High Resolution Unit (HRU) can receive supplies, but the checkpoint was not expecting a receiving object type of HRU.

Two changes were made to correct this problem:

- The checkpoint code was improved to expect a supply recipient type of HRU.
- Because the data is not needed after the transfer of supplies is reported to the AAR, the recipient attribute is cleared after being reported to the AAR. This will speed up the reading in of the checkpoint file.

3.71 JTLS-2024-16562 Add Attached Unit To Amphib Operations List Crash

A user added an Attached unit to an amphibious operations list. The model did not catch this at the time the order was sent, and later crashed.

The code was corrected to check for this situation. An order that includes an Attached unit as part of an amphibious operation is now rejected.

3.72 JTLS-2024-16565 Crash Removing Unit From Grid It Is Not In

A unit was told to leave a grid that it was not in. The Exercise Team could not recreate the situation.

The model was changed to catch the error and report the error if it happens again.

3.73 JTLS-2024-16566 Crash Taking Checkpoint After Limited Order Push

When replaying a situation by backing up to a previous checkpoint and pushing orders, it is possible to input a pound sign (#) in a Critical Order file to indicate that not all orders should be replayed. If this capability is used, and a checkpoint is attempted from the situation being replayed, the checkpoint fails. The issue is that the file from which the orders are read was not closed under this specialized circumstance.

The closure of the Critical Input File was properly placed to ensure that it is always closed under all circumstances.

3.74 JTLS-2024-16569 Crash Moving Formation With No Ships

A Naval Formation without any ships was moving, causing a model crash. The situation could not be repeated.

To stop this crash in the future, the model has been changed to catch the error, generate an associated Logic Error and stop the crash from happening. If the situation presents itself again, the Logic Error will be generated and the situation can be investigated further.

3.75 JTLS-2024-16570 Add Abort Flag To Network Optimization

In an attempt to allow Naval Units to find their way using the Sealanes over long distances, a database change was made to increase the minimum search box for how to get on and off the Sealane network. This database change allowed the model to get into an extremely long compute state.

The database change was obviously not a good idea, but to solve this problem the following has been included in the model:

- An Abort Flag has been added to the process that GATHER NETWORK NODES and GATHER GRID NODES. If the process gets into a long compute state, model control can more easily stop the process without finding a route.
- The logic was changed to separate the route search box and the node search box. Given the new algorithm, a network search box can be made as large as desired without any ill effects for game speed. The search box for getting on the network and getting off the network in JTLS-GO 6.2 will use the existing database parameter called MIN END OVERLAP DISTANCE. As long as this parameter is set to a reasonable distance, such as 40 KM, no long route compute states should be encountered.

3.76 JTLS-2024-16572 Unnecessary Player Damage Report Logic Error

A logic error was generated when a Controller input an Assess Weapon Damage Order and used the Aircraft Load Assessment Option. The model incorrectly assumed that this assessment was caused by an air mission dropping weapons.

Because there was a legal reason for the situation, the Logic Error was removed as a false positive.

3.77 JTLS-2024-16575 Change WHIP Filter Labels From ACMID To ACM

The WHIP Area filters listed the option to filter Air Control Measure (ACM) areas using the title ACMID. This was confusing because it was not the ACM Identifiers (ACMIDs) that were being filtered on and off, but the actual ACM areas.

The labeling was updated to display as ACM in the WHIP filter panel.

3.78 JTLS-2024-16576 Perception Support Causes ELS Crash

The ELS crashed while processing a perception support order from an external model. The specified area contained a catastrophic kill of a destroyed aircraft.

The ELS was attempting to find the radius of the destroyed aircraft entity. The logic assumed the aircraft was associated with an active air mission when it was actually linked to an immobilized object. The code was modified to keep track of the radii of all combat system entities. These radii were assigned when the entity was created, instead of looking it up later in the process.

3.79 JTLS-2024-16577 ATOT Writes Improper Air Mission Route Utility

The ATO Translator writes the route points for any air mission that require a guided path between tasks. When an ACM having more than two points is used for the route, the Translator uses an improper XML tag. The route is therefore not processed properly by the WHIP.

The Translator code was modified to properly place the XML tag on each route point.

3.80 JTLS-2024-16578 ATOT Not Using ACMID In Package Mission

Whenever the ATO Translator is configured to write orders using ACM names, any package mission having an ACM as the target location does not have the name of the ACM applied to the order field for the target location. The latitude and longitude values are used regardless of the ACM configuration.

The Translator was modified to check the ACM configuration option before writing the location details of the package mission order. When the ACM option is selected, the Translator uses the ACM name, if available, for the target location.

3.81 JTLS-2024-16579 ATOT Error For Area Attack Mission

A package attack mission has several options to use for selecting an object to attack. When a Unit, Target or JDPI are provided, and no specific object can be resolved, the Translator will report Error 433, "Mission has no tasks".

However, when the Translator is processing a mission which uses only areas to attack, no specific target object can be identified, so the Translator also reports an error. The Translator should not report Error 433 in this case.

The Translator was modified to consider the special case where an attack mission is provided an area, rather than a specific object, in which to either orbit or attack. The user will not be falsely alerted with Error 433.

3.82 JTLS-2024-16580 ATOT Missions Start Before ATO Period Start

The ATO Parser was used with an option to shift all the ATO missions in relation to the game start time. This option is generally used for shifting the times to later values. However, the shift was in the past. In this case, some missions were supposed to start before the beginning time of the simulation. This discrepancy was not reported by the Translator, which allowed the mission orders to be sent to the simulation.

The Translator was modified to report an error for each mission that is scheduled to take off prior to the start time of the scenario.

3.83 JTLS-2024-16584 ELS Negative Combat System Counts

The ELS received negative numbers of combat systems for a unit. This caused the ELS to enter an extremely long processing loop. The aggregate model incorrectly published negative numbers on the JODA for some of the combat system counts.

The ELS incorrectly converted the negative combat system counts into large integers. This happened because the small negative number was transformed into a very large positive value when the data parameter was converted from a signed 64 bit integer into an unsigned 32 bit integer.

The ELS code was modified to prevent the assignment of negative numbers to combat system counts. If a negative number or a very large positive number (greater than 64000) was received, then the result was assigned a value of zero. This prevents the problem from affecting the ELS, but it does not address the core problem in the CEP and it remains an outstanding issue. The core issue within the CEP is still being investigated.

3.84 JTLS-2024-16589 ELS Crash While Restarting From Checkpoint

The ELS crashed while attempting to restart from a checkpoint. The CEP had previously crashed, so the ELS needed to be restarted. The CEP had been restarted and the model was run ahead to catch up with real time. The ELS crash happened while restoring an air mission which had already ended in the CEP.

When the CEP ran forward in time, some air missions and convoys had ended in the aggregate model. However, these objects existed in the checkpoint from which the ELS was restarted. The ELS code was checking to verify that the objects still existed in the aggregate model, but this

check was not applied to the combat systems associated with these obsolete objects. The crash occurred because there were one or more combat systems which could not be associated with their (obsolete) parent object.

The ELS code was corrected to verify the existence of the parent object before attempting to restore combat systems from a checkpoint. This prevented the crash from occurring in the future.

3.85 JTLS-2024-16590 ATO Parser Duplicate Call Sign Error Report

The ATO Parser makes checks of the data used in each mission contained in the ATO message. One check, for duplicate call signs assigned to multiple missions, is reported multiple times.

The ATO Parser performs the check for duplicate call signs for all the missions in the ATO. However, when the ATO includes more than one (country) side, the list of missions is checked for each of the sides. This lead to multiple reports of the call sign error, once for each side in the ATO.

The ATO Parser has been modified to only check the list of missions during this check one time.

3.86 JTLS-2024-16591 Single Record With Many Fields Stops ATO Parser

The ATO Parser terminated when it was processing an ATO with a Record having more than one thousand fields.

The Parser was configured to hold and process up to one thousand fields in a single record. However, an ATO message included a 7CONTROL record for a single task unit that described approximately 150 missions. The 7CONTROL record holds 7 fields for each mission, which amounted to approximately 1,050 fields. The configuration for the Parser was increased to hold 250 missions per 7CONTROL record.

3.87 JTLS-2024-16592 ATO Parser Lacks Reason For Exiting

The ATO Parser terminated with a confusing error.

The ATO Parser writes an error log, which is also displayed at the end of the Parse process. The error encountered by the Parser prevented the cause of the error to be written. The Parser was modified to write the error prior to exiting.

3.88 JTLS-2024-16593 ELS Unable To Restore Terrain From Checkpoint

The ELS was unable to restart from a previous checkpoint because the terrain files for that checkpoint were unavailable. The files for that entire checkpoint had been backed up to an alternative server and removed from disk.

The ELS was incorrectly reading from an old checkpoint directory. The correct method to obtain current terrain data was to start by reading the initial terrain data from checkpoint 0000. Updates for any terrain modifications were to be obtained from the Earthquake objects on the

JODA. The ELS code was modified to use this approach to correctly access the current terrain in the game.

3.89 JTLS-2024-16594 ATOT Module - Squadrons Not Available to Task

Squadrons with names that are subsets of others would sometimes not appear in the list of squadrons in the Tasking Unit Assignment screen.

Code that determines if a squadron can be tasked was corrected.

4.0 REMAINING ERRORS

Every effort has been made to correct known model errors. All reproducible errors that resulted in CEP catastrophic software failures (crashes) have been corrected. Other corrections were prioritized and completed according to their resource cost-to-benefit relationship.

The following list of issues is known and have not been fixed in time to make it into this release of JTLS-GO 6.2.4.0.

4.1 DDSC/WHIP/JOBE - CADRG Map Zoom

When using the CADRG map projection, if the width of the map is less than the height, the zoom tool does not work correctly.

4.2 MHE Targets Loading Air Mission Can Cause a Crash

MHE targets should be avoided for loading and unloading air missions. It is suggested that the database be set to “Do Not Use” for Air Missions.

4.3 The JTLS-GO Strategic Lift Missions Are Not Working Properly

Strategic Lift Missions, used to move TPFDD assets into the Theater and report the results to a real-world TPFDD processing system, has not been updated to work within JTLS-GO 6.2.

4.4 Tactical Ground Formation Attacks Do Not Work

The ability to send a Tactical Ground Formation on an Attack mission has been temporarily disabled due to reliability issues.

4.5 ATOT Spreadsheet Lacks Detailed Field Checking

The ATOT Spreadsheet Parser has been found to have numerous issues within the Spreadsheet format that are not caught and cause the spreadsheet parser to crash. Fixing the uncovered issues are being worked and should be fixed prior to the next maintenance release of the JTLS-GO 6.2 series.

APPENDIX A. ABBREVIATIONS AND ACRONYMS

Terms are included in this Appendix to define their usage in JTLS-GO design, functionality, and documentation.

AAA	Anti-Aircraft Artillery
AADC	Area Air Defense Commander
AAL	Air-to-Air Lethality
A/C	Aircraft
ACP	Air Control Prototype
ADA	Air Defense Artillery
AEW	Airborne Early Warning
AFB	Air Force Base
AG	Air-Ground (Air-to-Ground)
AI	Air Interdiction
AIM	Air Intercept Missile
AIREF	Air Refueling
AKL	Area Kill Lethality
AMMO	Ammunition
AO	Area of Operations
AOC	Air Operations Center
APC	Armored Personnel Carrier
ARECCE	Armed Reconnaissance
ARTE	Air Route
ARTY	Artillery
ASC	Automatic Supply Calculation
ASCII	American Standard Code for Information Interchange
ASW	Anti-Submarine Warfare
ATC	Aircraft Target Category
ATGM	Anti-Tank Guided Missile
ATK	Attack
ATO	Air Tasking Order
ATORET	Air Tasking Order Retrieve Program
ATOT	Air Tasking Order Translator
AWACS	Airborne Warning And Control System
AZ	Altitude Zone

BADGE	Bilateral Air Defense Ground Environment (used by Japan Defense Agency)
BAI	Battlefield Air Interdiction
BDA	Battle Damage Assessment
BDE	Brigade
BN	Battalion
C3	Command, Control, and Communications
C3I	Command, Control, Communications, and Intelligence
C4I	Command, Control, Communications, Computers, and Intelligence
CA	Civil Affairs
CADRG	Compressed ARC Digitized Raster Graphics
CAP	Combat Air Patrol
CAS	Close Air Support
CAT	Category
CCF	Central Control Facility
CCP	Command Control Prototype
CCU	Controller Change Unit
CEP	Combat Events Program
CMDR	Commander
COP	Common Operational Picture
CP	Combat Power
CS	Combat System
CSP	Combat System Prototype
CTAPS	Contingency Tactical Air Planning System
CTG	Commander Task Group
CTRL	Control keyboard command
DCA	Defense Counter Air
DCL	Digital Command Language
DDS	Database Development System
DEMSDB	Demonstration Standard Database
DISA	Defense Information Systems Agency
DIV	Division
DMA	Defense Mapping Agency
DoD	Department of Defense
DOS	Days of Supply

DPICM	Dual Purpose Improved Conventional Munitions
DS	Direct Support
DSA	Directed Search Area
DTG	Date Time Group
EC	Electronic Combat
ECM	Electronic Counter Measure
ECP	Engineering Change Proposal
EEI	Essential Elements of Information
ELINT	Electronic Intelligence
ELS	Entity Level Server
EODA	Entity Level JTLS Object Data Authority
ETA	Estimated Time of Arrival
FARP	Forward Arming and Refueling Point
FLP	Fire Lethality Prototype
FLOT	Forward Location of Troops
FOL	Forward Operating Location
FWL	Frederick W. Lanchester (originated a differential equation model of attrition)
GAL	Gallon
GCCS	Global Command and Control System
GRTE	Ground Route
GS	General Support
GSR	General Support Reinforcing
GUI	Graphical User Interface
HARM	High-speed Anti-radiation Missile
HE	High Explosive
HELO	Helicopter
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HQ	Headquarters
HRU	High Resolution Unit
HTML	Hypertext Markup Language
HTT	High resolution unit Target Type
HUP	High resolution Unit Prototype
ICM	Improved Conventional Munitions
ICP	Interface Configuration Program

ICPLLogin	Interface Login Program
ID	Identifier
IFF	Identification Friend or Foe
IIP	Intelligence Information Prototype
IMT	Information Management Tool
INFO	Information
INTEL	Intelligence
JCATS	Joint Conflict And Tactical Simulation
JDA	Japan Defense Agency
JDPI	Joint Desired Point of Impact (formerly DMPI: Desired Mean Point of Impact)
JDS	JTLS Data System
JDSP	JTLS Data System Protocol
JEDI	JODA Entity Data Identifier
JMCIS	Joint Maritime Combat Information System
JMEM	Joint Munitions Effectiveness Manuals
JODA	JTLS Object Distribution Authority
JOI	JTLS Operational Interface
JPL	Jet Propulsion Laboratory
JRSG	Joint Rapid Scenario Generation (formerly JIDPS: Joint Integrated Database Preparation System)
JSDF	Japanese Self-Defense Force
JTLS	Joint Theater Level Simulation
JTLS-GO	Joint Theater Level Simulation - Global Operations
JTOI	JTLS Transaction Operational Interface
JXSR	JTLS XML Serial Repository
KIA	Killed In Action
KM	Kilometer
KNOTS	Nautical miles per hour
LA	Lethal Area
LAN	Local Area Network
LAT	Latitude
LB	Login Build (JTLS order type)
LDAP	Lightweight Directory Access Protocol
LDT	Lanchester coefficient Development Tool
LOG	Logistics

LOGIN	Logistics Input
LOGREP	Logistics Report
LONG	Longitude
LOTS	Logistics Over The Shore
LR	Long Range
M&S	Modeling and Simulation
MAPP	Modern Aids to Planning Program
MB	Megabyte
MCP	Mobility Counter-mobility Prototype
MCR	Model Change Request
MG	Machine Gun
MHE	Material Handling Equipment
MIP	Model Interface Program
MOGAS	Motor Gasoline
MOPP	Mission-Oriented Protective Posture
MOSAIC	NCSA user interface software
MOTIF	X Window System graphical interface
MP	Maneuver Prototype
MPP	Message Processor Program
MSC	Major Subordinate Command
MSG	Message
MTF	Message Text Formats
MUREP	Munitions Report
MUSE	Multiple Unified Simulation Environment
NCSA	National Center for Supercomputing Applications (University of Illinois)
NEO	Noncombatant Evacuation Operations
NFS	Network File Server
NGO	Non-Governmental Organization
NIS	Network Information Service or Network Information System
NM	Nautical Mile
NTSC	Naval Telecommunications System Center
OAS	Offensive Air Support
OBS	Order of Battle Service (formerly UGU: Unit Generation Utility)
OCA	Offensive Counter-Air

OJCS	Organization of the Joint Chiefs of Staff
OMA	Order Management Authority
ONC	Operational Navigation Chart
OPM	Online Player Manual
OPP	Order Preprocessing Program
OTH	Over The Horizon
OTH Gold	Over The Horizon message specification
OTH-T	Over The Horizon-Targeting
pD	Probability of Detection
pE	Probability of Engage
pH	Probability of Hit
pK	Probability of Kill
PKI	Public Key Infrastructure
PKL	Point Kill Lethality
POL	Petroleum, Oil, and Lubricants
POSIX	International operating system standard based on System V and BSD
PPS	Postprocessor System
PSYOPS	Psychological Operations
RAM	Random Access Memory
RDMS	Relational Database Management System
RECCE	Reconnaissance (air missions)
RECON	Reconnaissance (ground missions)
REGT	Regiment
RNS	Random Number Seed
ROE	Rules Of Engagement
RPT	Report
RSP	Reformat Spreadsheet Program
SAL	Surface-to-Air Lethality
SAM	Surface-to-Air Missile
SAM/AAA	Surface-to-Air Missile/Anti-Aircraft Artillery
SC	Supply Category
SCP	Simulation Control Plan
SDB	Standard Database
SEAD	Suppression of Enemy Air Defense

SIMSCRIPT	Simulation programming language (product of CACI, Inc.)
SIP	Scenario Initialization Program
SITREP	Situation Report
SLP	Sustainment Log Prototype
SOF	Special Operations Forces
SP	Survivability Prototype
SQL	Structured Query Language
SR	Short Range
SRP	Start/Restart Program (a JTLS component)
SRTE	Sea Route
SSM	Surface-to-Surface Missile
STR	Software Trouble Report
SUP	Ship Unit Prototype
SVP	Scenario Verification Program
SYNAPSE	Synchronized Authentication and Preferences Service
TADIL	Tactical Digital Interface Link
TCP/IP	Transmission Control Protocol/Internet Protocol
TEL	Transporter Erector Launcher
TG	Target entity attribute prefix
TGS	Terrain Generation Service (formerly TPS:Terrain Preparation System)
TGT	Target
TMU	Terrain Modification Utility
TOE	Table of Organization and Equipment
TOT	Time Over Target
TOW	Tube-launched Optically-tracked Wire-guided missile
TPFDD	Time-Phased Force Deployment Data
TTG	Target Type Group
TTL	Target Types List
TUP	Tactical Unit Prototype
TW	Targetable Weapon
UBL	Unit Basic Load
UIM/X	GUI builder tool
UNIX	POSIX-compliant operating system
UNK	Unknown

UOM	Unit Of Measure
USA	United States Army (U.S. and U.S.A. refer to United States and United States of America)
USAF	United States Air Force
USCG	United States Coast Guard
USMC	United States Marine Corps
USMTF	United States Message Text Format
USN	United States Navy
UT	Unit entity attribute prefix
UTM	Universal Transverse Mercator
VIFRED	Visual Forms Editor
VMS	Virtual Memory System
VTOL	Vertical Take-Off and Landing aircraft
WAN	Wide Area Network
WDRAW	Withdraw
WEJ	Web Enabled JTLS
WHIP	Web Hosted Interface Program
WIA	Wounded In Action
WPC	Warrior Preparation Center
WPN	Weapon
WT	Weight
WW	Wild Weasel
XMS	XML Message Service

APPENDIX B. VERSION 6.2.0.0 DATABASE CHANGES

Refer to the JTLS-GO 6.2.0.0 Version Description Document (VDD) for the list of database changes between the JTLS-GO 6.1 series and the JTLS-GO 6.2 series.

APPENDIX C. VERSION 6.2.0.0 REPOSITORY CHANGES

The R&A Database Team is continually adding and vetting unclassified data to expand and maintain the JTLS-GO Data Repository. Over the last year as part of the JTLS-GO 6.2 development effort, this entire process has been conducted in both the JTLS-GO 6.1 and JTLS-GO 6.2 versions of the repository. No specific, unique, additions were made to the JTLS-GO 6.2 repository. The repository delivered with this initial version of JTLS-GO 6.2 contains the same data as the JTLS-GO 6.1 version of the repository, except the format has been altered to meet the requirements of JTLS-GO 6.2.